

Remarks/Arguments

Claims 30 through 32, inclusive, have been withdrawn from consideration as being directed to a non-elected species and subject to applicant's right to file a divisional patent application directed to this non-elected subject matter.

Claims 26, 28, 33, and 34 have been amended to more clearly define applicant's invention.

The Examiner is respectfully urged to reconsider and withdraw the rejection of claims 26 through 28, inclusive, 33 and 34 over J.A. Muñoz et al. "Arsenic Adsorption by Fe(III)-Loaded Open-Celled Cellulose Sponge", Vol. 36, No. 15, 2002 "Environmental Science & Technology" pp. 3405-3411 (hereafter referred to as Muñoz et al.) under 35 U.S.C. §102(b). As amended, independent claim 26 and claims 27 and 28 that depend directly on claim 26 now recite:

Catalyzing the chemical replacement of the lignocellulose hydrogens
(H) of the hydroxyl groups of the lignocellulose with the cations...

...to enable the contaminants to be retained at the Fe or Al combined
with the lignocellulose;

Thus, as claimed by applicant and described in paragraphs [0027] and [0028] of the application as filed, the Fe (or Al) is covalently bonded to the hydroxyl groups in the lignocellulose to enable the contaminants to be retained at the Fe or Al that is combined with the lignocellulose. Essentially, according to applicant's claimed invention, the modified lignocellulose participates in the chemical reactions that remove the contaminants from the aqueous solution.

Muñoz et al., in contrast do not disclose or even suggest a chemical interaction between the cellulose sponge and the contaminants. Illustratively, Muñoz et al. page 3405 (right -hand column) et seq. teach:

Forager Sponge, an open-celled cellulose sponge which contains a
water-insoluble polyamide chelating polymer (formed by reaction of
polyethyleneimine and nitrilotriacetic acid)...is claimed to contain
free available ethyleneamine and iminodiacetate groups to interact
with heavy metal ions by chelation and ion exchange.

Thus, applicant's claimed invention relies on Fe or Al covalently bonded to the hydroxyl groups in the lignocellulose to remove the contaminants. Contrary to applicant's teaching, however, Muñoz et al. relies on two entirely different substances (ethyleneamine and iminodiacetate groups) to interact with the heavy metal contaminants. Muñoz et al. clearly do not disclose or suggest interaction between a modified lignocellulose and the contaminants, thus claim 26 is patentably distinguished from the Muñoz et al. disclosure. For these reasons also it is submitted that claims 27 and 28 which directly depend on claim 26 also rise to the level of patentability.

Independent claim 33 has been amended in essentially the same way as independent claim 26 considered above. As a result, it is respectfully urged that claim 33 and its depending claim 34 also distinguish patentably over the Muñoz et al. reference.

The Examiner also is requested to reconsider and withdraw the rejection of claim 29 (which depends directly on claim 26) and claim 35 (which depends directly on claim 33) under 35 U.S.C. §103(a) as unpatentable over the combination of Muñoz et al. and the opinion that it is obvious to one of ordinary skill in the art to obtain the cellulosic starting material of Muñoz et al. from the wood, paper or cotton that characterize depending claims 29 and 35.

Attention in this respect is once more invited to the passage that begins in the last paragraph (right-hand column) on Muñoz et al. page 3405 and continues to the end of the first paragraph (left-hand column) on page 3406:

Forager Sponge, an open-celled sponge which contains a water-insoluble polyamide chelating polymer (formed by reaction of polyethyleneimine and nitrilotriacetic acid)...is claimed to contain free available ethyleneamine and iminodiacetate groups to interact with heavy metals by chelation and ion exchange.

Applicant's recited wood, paper and cotton are not at all suggested by the Muñoz et al. water-insoluble polymers contained in an open-celled sponge. Only with the benefit of applicant's own teaching is it possible for one of ordinary skill in the art to disregard the polymers contained in the open-celled Forager Sponge of Muñoz et al. and treat the lignocellulose in a manner that enables the modified lignocellulose to participate in removal of the contaminants from an aqueous solution as claimed by applicant.

The other references cited by the Examiner have been noted.

In summary, the corrected citation for two of the references enumerated in the Information Disclosure Statement lodged with the instant application when it was filed are submitted with this response on the Form PTO/SB/08a enclosed herewith. Applicant believes, moreover, that no fee is required for this corrected submission.

Turning now to the rejection of claims 26 through 28, 33 and 34 over Muñoz et al. under 35 U.S.C. §102(b), it is respectfully urged that Muñoz et al. teaches the use of the ethyleneamine and iminodiacetate polymer groups to remove contaminants from aqueous solutions. Applicant's claims in contrast are directed to chemically changing the hydroxyl groups in a lignocellulose composition to enable the modified lignocellulose to participate chemically in the contaminant removal process. Clearly in the absence of applicant's own disclosure, a person of ordinary skill in the art would not perceive lignocellulose modification in the Muñoz et al. polymer groups. Thus, it is submitted that only through an impermissible use of applicant's own teaching is it possible to revise the clear terms of Muñoz et al. to meet the recited features of the claims now standing in this case.

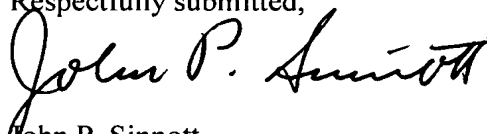
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In a similar manner, without reference to applicant's own disclosure, a person of ordinary skill in the art would not be able to disregard the Muñoz et al. polymers and undertake the lignocellulose hydroxyl groups chemical modification to produce applicant's process as recited in claims 29 and 35.

Accordingly, applicant requests that the Examiner withdraw the rejection of claims 26 through 29, inclusive; and 33 through 35, inclusive. Accordingly, early allowance of claims 26 through 29, inclusive, and 33 through 35, inclusive, is earnestly solicited.

The Examiner, moreover, is asked to telephone applicant's undersigned counsel at the number noted below if it will advance the prosecution of this application.

Respectfully submitted,



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April 19, 2007
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